Center for Information Technology
Workforce Plan: FY 2002-2003

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Director, CIT and Chief Information Officer, NIH

CIT Workforce Plans for FY'02 & FY'03

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The following is CIT's workforce plan for the FY 2002 & 2003. As the IT support organization for NIH the overwhelming majority of our work and of our positions provide direct services or support to the NIH intramural, extramural and administrative programs including the NIH enterprise systems development efforts under way. Attached is our two page staffing chart for FY02/03.

1.Skills currently vital to the accomplishment of NIH goals and objectives

CIT Workforce plans are linked to the goals and objectives of the NIH scientific programs.

The CIO's overarching goals for IT at NIH are two-fold:

- Strengthening IT management across the NIH.
- Providing stewardship of enterprise IT applications at the NIH.

CIT supports these goals by providing every NIH researcher and administrator easy access to the information technology tools, resources and education they need to do their work from anywhere at any time. In addition, the Center's long-term objectives are:

- Providing a utility-like IT infrastructure that is reliable, secure, ubiquitous and economical.
- Advancing computational bioscience for the NIH Intramural Research Program.

CIT provides a vast array of IT services to the NIH community in support of these goals and objectives: networking, data center computing, enterprise applications development and support, computational bioscience and scientific computing, telecommunications, user support and training, among others. CIT also provides staff support to the CIO, and performs the policy and oversight functions required by that role. CIT workforce plans are driven by NIH institutional needs and are leveraged to meet ever-increasing workload demands for responsive IT support. The growth in demand for services and evolving technology combined with the difficulties inherent in attracting an expert IT workforce require CIT to proactively recruit technical talent in order to keep up with institutional demands in an environment where bandwidth demand increases over 2% per month and 30% annually.

A number of positions listed in our workforce plan are required to assist NIH in its implementation and maintenance of enterprise systems. These positions are critical to the overall success of these systems by supporting development and implementation. It is imperative that CIT recruit for these critical transNIH enterprise systems vacancies immediately.

The three primary NIH Enterprise IT Systems are eRA, CRIS, and NBS:

- The goal of the Electronic Research Administration (eRA) is to make the extramural research grants enterprise more effective and efficient. Paperless electronic transfer of application and administrative data is NIH's vision for the 21st century. In addition to a congressional mandate requiring agencies to migrate from paper-based to electronic systems, NIH is pursuing eRA to lower costs and administrative effort, speed up process, and provide better quality data. Ultimately, all parties involved will conduct seamless, secure, interactive business. The potential benefit to the extramural community is immense as approximately 85% of the NIH budget is allocated to grant expenditures.

- The new Clinical Research Information System (CRIS), in addition to replacing base functionality for physician ordering, result retrieval, and charting functions for all NIH inpatient and outpatient visits, will also include essential features to support the expanding NIH clinical research mission. These features include longitudinal access, clinical decision support, research protocol mapping, ease of interfacing with research systems, ease of retrieving old data, support for structured text, support for management data, and image presentation. In facilitating the work of the clinical researcher, CRIS will directly support the NIH mission.

- The NIH Business System (NBS) is a massive undertaking, combining all of the functionality of the Administrative Database (existing NIH business system developed in the 1970’s) with several satellite systems, improved security, reliability and a new user interface. It is to allow an integration of all data within NBS, as well as a shared data capability between other systems such as IMPAC II and the DHHS's Enterprise Human Resource Planning System, where the administrative and research communities utilize common data sets. It will also allow electronic purchasing via the Internet, “best practice” processes for administrative functions such as property and inventory, and an accounting system that meets the accounting standards established by the Joint Financial Management Improvement Program.

Although we have completed the attached charts that identify all of our positions as either intramural or extramural, in fact the overwhelming majority of our positions are more appropriately identified as infrastructure positions not specifically tied to intramural or extramural. FY01 FTE breakdown showed that 82% of CIT's employees were located in the program areas (our line organizations) and 18% were located in administrative or management offices. Over 85% of our FY02 hires are targeted for program area positions. 64% of CIT positions are classified in IT series and 19% are classified in scientific series. Only 17% of CIT positions are management and administration related, a rather low number that also includes the CIO program staff performing IT oversight and policy management.

2.Expected changes in work and how this will affect human resources.
CIT's responsibilities in support of the NIH mission require recruiting and retaining staff with an unusual mix of advanced technical and scientific expertise. Appropriate candidates are difficult to find or recruit. Additionally, they are in heavy demand in the private sector particularly in the local Biotechnology arena and are, therefore also, difficult to retain. Without the ability to recruit, hire and retain qualified staff, CIT will be unable to provide NIH the administrative management IT tools necessary to conduct business and to manage the data intensive research and research grants functions that are the mission of NIH. Without the necessary engineering, scientific, and technical expertise CIT will be unable to meet its two long term objectives. Additionally, understaffing the CIO IT oversight function will impair NIH compliance with the Government Information Security Reform Act, Clinger-Cohen Act and other mandates.

Most CIT recruitment through FY'03 will be focused on hiring IT staff with competencies in UNIX, SQL, C+, ORACLE, PeopleSoft, Visual Basic, JavaScript, ColdFusion, LINUX, XML and NT server administration.

CIT has 467 people onboard as of June 3, 2001 and our staffing chart includes almost 120 positions that we need to fill (46 existing vacancies, 70 expected vacancies plus summer program). CIT's requested FTE level for FY'02 is 525. A large number of positions are still vacant as a result of significant recruitment difficulties and the existing freeze. This has caused our vacancy rate to increase from 9% in December 2000 to 11.2% by April 2001. Of the listed recruitments, 16 positions currently affected by the hiring freeze are considered critical to infrastructure support operations and the NIH Enterprise systems. (Appendix 1).

Performance plans, tied to mission goals, are in place for senior CIT staff including Title 42 employees. CIT formally pursues 3-5 conduct or performance cases yearly.

3. Recruitment, training and retention strategies.
CIT has broadened our recruitment efforts beyond traditional methods to specifically include a greater reliance upon student appointments, term appointments and temporary appointments – both full time and part time. We have had positive experience with a small number of recruitment bonuses. CIT will attempt to hire 6 disabled employees and 6 minority employees in targeted series (334/2210, 341/201, 303, 335) during FY'02 and 5 more disabled employees in FY'03 as part of our minority and disability recruitment program goals.

CIT uses AWS, AWP, incentive awards, detail assignments, training, retention allowances, informal dress and atmosphere, compensatory time and quality equipment as retention tools. Retention allowances have been necessary for a number of key positions. This strategy is in place and facilitates recruitment and retention with no negative impact on our program operations. Training, in particular, is an area often highly regarded by departing employees in our exit interviews.

4. How CIT is addressing expected skill imbalances over the next five years.
The move to automated services in the Computer Center Operations branch by FY'03 will require an extensive retraining effort as a majority of our computer operators will no longer be needed. However there will be a greater need for highly trained automated operations specialists. Some of our operators are expected to retire but most will need to be retrained either in automated operations techniques or in some other required area. With an expected decline in the use of our OS/390 computers and a growth in our needs for UNIX and NT/SQL server support and ORACLE programmers and database administrators CIT is planning a major retraining effort and hopes to have a formal cross training program whereby the OS390 system can still be supported while staff are provided job enrichment opportunities. CIT has already implemented a successful retraining initiative (Career Enhancement Program) that will continue to be used. Succession planning is also underway. As a result, we expect to see a major shift in our onboard competencies by FY'03.

In FY'98 20% of our losses were due to retirement. That percentage has dropped to 16.4 % in FY'00. By far, the number one destination of departing employees, however has been to the private sector. In FY99 41% of our losses were to the private sector, in FY'00 the number increased to almost 45% of all our losses.

CIT lost 11 out of a possible 60 retirement eligible employees in FY'00. CIT has 69 retirement eligible employees this year and anticipate 12 of these people to retire. CIT's attrition rate for FY'00 was approximately 8.5%. Our attrition rate for FY'01 based on the first seven months of data is almost 10%. We would need to hire 51 employees during FY02 just to maintain our current workforce. During the first seven months we have only been able to hire 25 employees. Our attrition rate for IT professionals is 11.5% and is expected to continue at that approximate level throughout this period.

Over 62% of our current workforce is 41 years old or older. Only 8% of our workforce is 30 or younger. Unfortunately our IT staff is older than our workforce in general. Almost 68% of our IT workforce is 41 years or older and only 5.3 % of our IT workforce is under age 30.

5. Challenges to our ability to recruit & retain a high-quality diverse workforce.
IT pay has been improved at the junior levels but not at the senior technical levels. A large majority of the IT professionals who have left CIT for the private sector have cited salary concerns as the number one or two reason for leaving. Retention of technical experts is critical, particularly since we cannot, as a result of the freeze, hire new ones. The ability to use retention pay is essential. An increase in authority to offer more than 25% would be helpful in attracting talented or expert staff. We have nationwide recent salary surveys that support such an increase in IT retention pay, as does the anecdotal information we have from our exit interviews. We do not have authority to make direct hires and this further detracts from our ability to compete with the private sector. However, Title 42 authority has been particularly helpful in staffing and retaining our senior level scientific positions and the Career Intern program and the ability to repay college loans are expected to help with entry level recruitments.

6. Steps taken to reduce layering.
The establishment of CIT in February of 1998, and the subsequent reorganization of Feb. 1999 were steps taken by NIH to streamline and delayer the delivery of IT and telecommunications services and support. These reorganizations eliminated a layer of supervision and realigned functions along business lines. It has yielded some economy of scale and reduced overlap between similar functions. Additionally CIT's centralized administrative component supports the Center and provides a support structure for the NIH Chief Information Officer. Growth in CIT since its establishment has been due to the requirements of carrying out the CIO role, growth in NIH infrastructure needs and the implementation of enterprise IT solutions. These systems offer a vast potential for streamlining service delivery in grants and all major administrative processes. The delegations of HR authorities have allowed our division directors to make final decisions on items that used to require one or two additional layers of review.

Our supervisory ratio is 1:9.3. This figure does not take into account managing work performance for almost 200 contractors who augment our staff. We anticipate this ratio improving to 1:10 during FY02 specifically by reorganizing DNST and the downsizing of the Computer Operations section. In FY03 there will be further downsizing of the Computer Operations Section and the possible abolishment of the User Support Branch of DCS. This may improve our ratio to 1:12.

7. Barriers to achieving workforce restructuring

The current freeze on promotions above the career ladder and on reassignments has forced us to postpone current plans for restructuring since we have to focus our energies on meeting customer demands and managing numerous employees and contractors with many key managerial vacancies. It would facilitate the downsizing of computer operations if we had buyout authority. Most of our operators (GS-8/9s) are retirement eligible but can't afford to take the pay cut that would result from retiring without a buyout. The executive decision to not use RIF distorts and reduces the potential benefits of any proposals to eliminate or contract out functions and activities. Early out retirement would only further exacerbate the loss of senior level technical talent.

If you have any questions in regards to this information you may contact Mr. Mitchell A. Levine, Associate Director for Management on 301-496-0513.

Alan S. Graeff

CIT Hiring Plans for FYs 2002/2003

	FY 2002	FY 2003	Total
INTRAMURAL			
Senior Investigators [1]	0	0	0
Investigators [1]	0	0	0
Other MD/PhDs, in FTE positions	5	4	9
Other MD/PhDs in non-FTE positions (IRTA, VF)	2	0	2
Other lab/clinical staff => GS-13	5	6	11
Other lab/clinical staff =< GS-12	14	9	23
Admin/support staff => GS-13	6	3	9
Admin/support staff =< GS-12	5	3	8
Infrastructure support => GS-13	38	25	63
Infrastructure support =< GS-12 [2]	13	22	35
Summer and other temps not listed above (include summer IRTAs)	15	17	32
TOTAL INTRAMURAL	103	89	192
EXTRAMURAL			
HSAs/SRAs and other senior level science administrators => GS-13	0	0	0
Other science administration positions =< GS-12	0	0	0
Grants Management and R&D Contract Staff => GS-13 [3]	0	0	0
Grants Management and R&D Contract Staff =< GS-12 [3]	0	0	0
Administrative and support staff => GS-13	2	2	4
Administrative and support staff =< GS-12	2	2	4
Infrastructure support => GS-13	9	5	14
Infrastructure support =< GS-12 [2]	14	10	24
Summer and other temps not listed above	5	6	11
TOTAL EXTRAMURAL	32	25	57
IC TOTAL	135	114	249

[1] Using OIR professional designations

[2] Include all wage grade positions related to infrastructure in this group

[3] Includes 1101, 1102, 301 and 303 series where individual is engaged in these activities on a full-time basis.

Appendix I – CIT Most Critical Vacancies Affected by the Hiring Freeze

Deputy Director, DNST – GS-334-15 (vacant) Deputy Director position -necessary to share in management of a large (90 FTE's plus over 100 contractor staff), 7x24, geographically dispersed, mission critical organization. DNST is responsible for the entire NIH wide area network connectivity, cabling plant, telecommunications (inclusive of dial tone), video, wireless and multimedia services for the NIH. Security operations of the NIHnet are also under this division. This position was listed as our most critical mission need in FY01. There is a greater possibility of critical infrastructure failures if this position is not filled.

Section Chief, Network Infrastructure – GS-334/854-14. (vacant) The chief of the Network Infrastructure Section is directly responsible for providing 7x24 support for network access for all of NIH. The chief directs almost 20 employees plus a number of contract staff. Due to a number of key departures in the past year there is no current staff member that can handle this responsibility. Mission Critical. As long as this position remains vacant operations in this area are at risk.

IT Architect –AD -1550/334/854 (or GS-1550/334/854-15 if necessary) (new) This position, which reports to the NIH CIO, is necessary in order to provide the crucial business intelligence at the Enterprise Applications tier. This position is to provide a high degree of coordination to avoid duplication of effort at the IT services layer, and to maintain maximum integration at the functional level (warehousing, common elements, etc.) This position will assist in coordinating efforts with the DHHS and internal to NIH. Mission Critical. Without this position there will be no single position responsible for ensuring this coordination, this is likely to lead to greater confusion and duplication of effort.

Chief Technology Officer – SL/AD-1550. (vacant) The Chief Technology Officer position is necessary in order to ensure consistency in approach across the NIH for new applications and to work with DHHS on department-wide initiatives impacting the NIH. Mission Critical. The impact of not filling the position would be most noticeable in continuing the leadership in providing IT support to the biomedical and scientific community of NIH.

Oracle developers for NBS and EHRP (DECA) GS-33413/14. 3 positions. (new) These positions are necessary in order to implement these DHHS/NIH enterprise applications. Mission Critical. Not filling these positions seriously jeopardizes the success of these implementations.

Oracle DBAs (DCSS) GS-334-13/14. 3 positions. (new) These database administrator positions are necessary in order to run and maintain critical enterprise systems. Mission critical. Not filling these positions seriously jeopardizes the success of these implementations.

Network security staff– GS-854/334-14. 3 positions. (1 vacant 2 new) Network security positions – necessary to guard against intrusion and protect NIH critical IT infrastructure from external threats. This is in support of the Government Information Security Act of 2000 and to respond to the growth in hacker attacks. Mission Critical. Not filling these positions will directly hamper NIH's ability to deter network attacks.

Unix system administrators GS-1550/334-13/14. 3 Positions - (v. Spitzberg & 2 new) Enterprise Open Systems (EOS) is a Unix-based server environment that hosts a variety of production and development applications and provides a stable software and data-repository environment for enterprise-wide database and information systems. Some of the critical applications supported include the DHHS Payment Management System, the Enterprise Human Resource Program, eRA (Electronic Research Administration Project) which integrates the Grants Management system IMPAC II and COMMONS, and the NIH Home Page. These are critical NIH-wide enterprise applications and have been so designated. Not filling these positions seriously jeopardizes the success of these implementations.